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GB 2017505 A EP 0439961 A1 EP 0374910 A1
EP 0366079 A2 EP 0360285 A2 EP 0193309 A1
US 4795455 A

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UK CL (Edition K) A5R RPG RPL
INT CL[5] A61F

(54) Sanitary towels

(57) A sanitary towel (2) comprising channel means (4) for receiving menstruation liquid. The channel means (4) may comprise a primary channel (6) and secondary channels (8). The channel means (4) enables the sanitary towel to cope with heavy menstrual flows. Preferably pads on wings (16, 18) help to retain the sanitary towel 2 in position. Preferably a dry mesh film (12) enables the menstruation liquid quickly and easily to pass through the film (12) so that the film (12) is able to form an upper surface of the sanitary towel (2), which upper surface feels dry and thus helps the sanitary towel (2) to feel comfortable to the user.

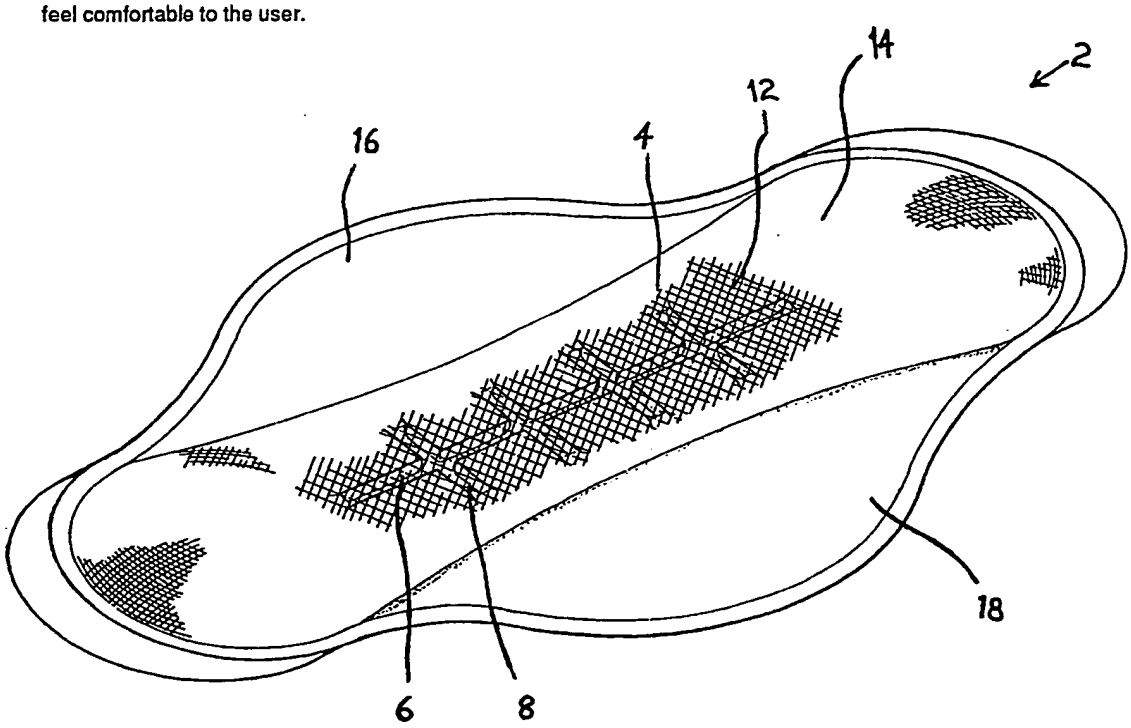


FIG 1

GB 2 258 403 A

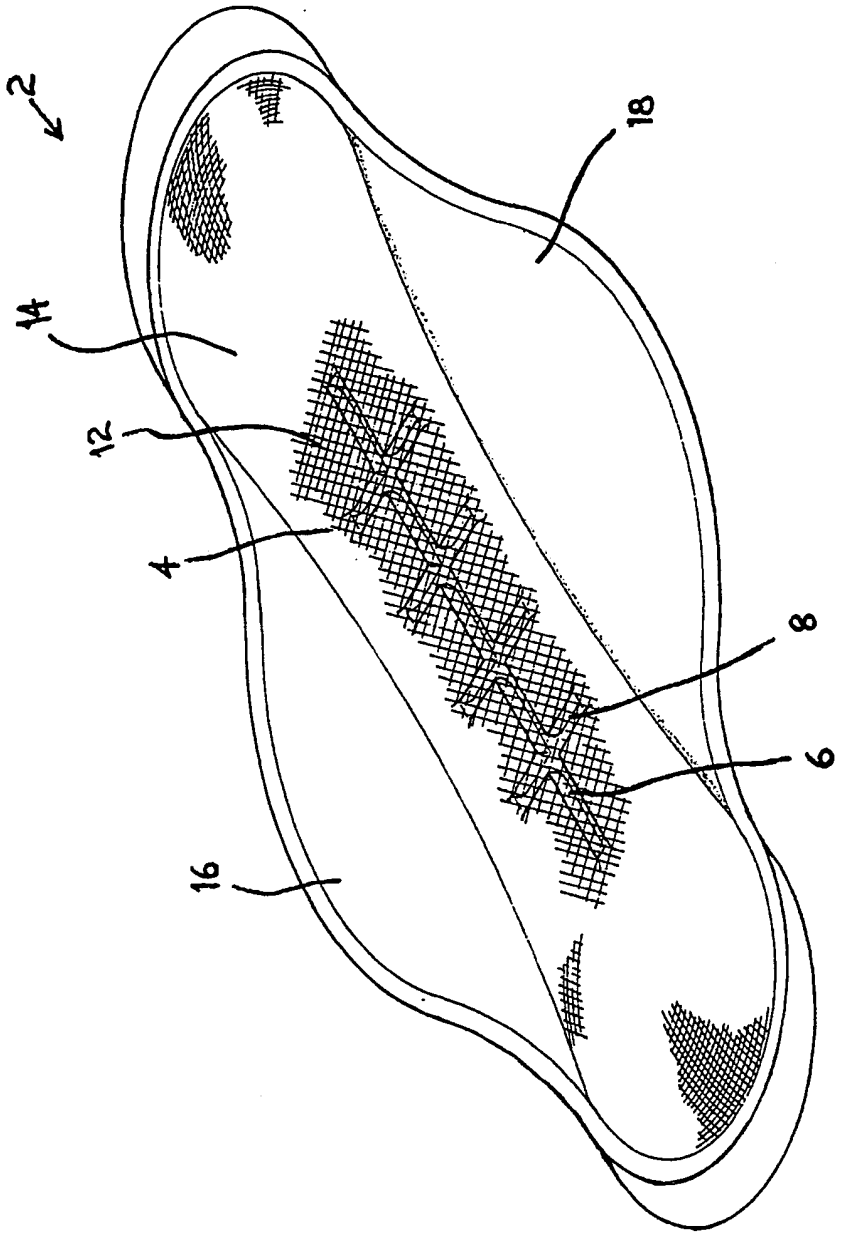


FIG1

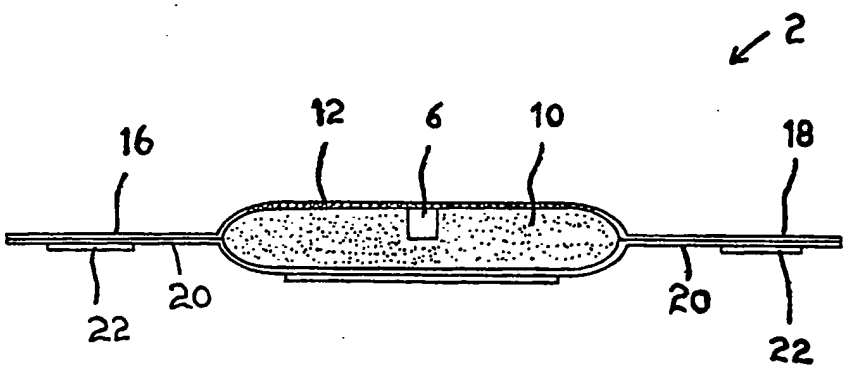


FIG 2

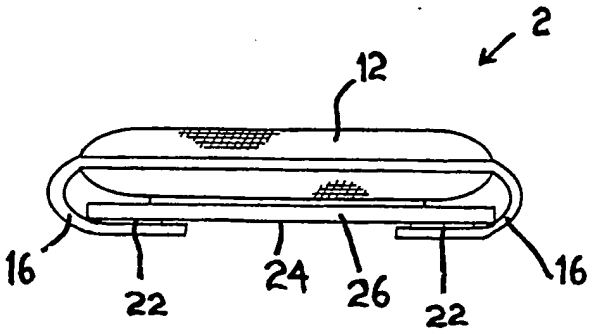


FIG 3

A SANITARY TOWEL

This invention relates to a sanitary towel.

Sanitary towels are well known and they are used by women to absorb menstruation liquid during their monthly menstruation cycle. Women may need to use sanitary towels or sanitary tampons for from 5 - 7 days each month. The sanitary towels or sanitary tampons should be such that they absorb the menstruation liquid and thus avoid staining of clothing. The sanitary towels and sanitary tampons should also be such that they have a cleansing function in order to facilitate avoiding bacterial infections.

In recent years, the number of manufacturers of sanitary towels has increased together with the number of available types of sanitary towels. Different sanitary towels may be employed for day time and night time use.

The known sanitary towels usually comprise a soft absorbent upper portion through which menstruation liquid passes, a high-molecular absorbent cotton middle portion, and a leak-proof plastics film which wraps both sides of the cotton middle layer in order to avoid leaks from both sides of the high-molecular absorbent cotton middle layer. The known sanitary towels may also

have pads for fixing to the wearer's panties.

Many of the known sanitary towels tend to be unsatisfactory in use. More specifically, the majority of women have to work as usual during their menstruation period and this movement of the women together with a relatively continuous menstruation liquid flow can result in the high-molecular absorbent cotton middle portion easily reaching its saturation point. This is especially so when the amount of discharged liquid is large. If the sanitary towel cannot be changed in time, the result is that the menstruation liquid leaks from the sanitary towel and stains the clothing. The need to change sanitary towels in time in order to avoid staining of the clothing is one of the greatest problems of women during menstruation.

Known efforts to solve the above mentioned problems have tended to focus on improving materials of high-molecular absorbent structure, or to developing an effective absorbent material that can swell from a small particle to a larger object. However, no matter how effective the absorbent material is, the size of the sanitary towel has basically to remain the same size due to the fact that it needs to be worn and to be comfortable. The absorbent material is often squeezed because of movement of the wearer during use and this may tend to expel absorbed material, resulting in leakages

and staining of clothing.

It is an aim of the present invention to reduce the above mentioned problems and, in particular, to provide a sanitary towel which obviates or reduces leaking and which is comfortable to wear.

Accordingly, the present invention provides a sanitary towel comprising channel means for receiving menstruation liquid.

The channel means is able to receive menstruation liquid and to cope with large flows of the liquid from the vagina. The channel means can be used to disperse the menstruation liquid into the sanitary towel in a dispersed and uniform manner.

The sanitary towel may be one in which the channel means comprises a primary channel which extends along a longitudinal axis of the sanitary towel.

Preferably, the sanitary towel comprises at least one secondary channel which extends at an angle to the primary channel. The secondary channel preferably extends at right angles to both sides of the primary channel. There may be four of the secondary channels. If desired, more or less than four of the secondary channels may be employed. Also, if desired, more than one primary channel may be employed.

The channel means may be provided in a layer of absorbent material. The absorbent material may be high-molecular absorbent cotton material. Other types of absorbent material may be employed.

The sanitary towel may be one in which the layer of absorbent material is covered with a dry mesh film such that the dry mesh film is positioned above the layer of the absorbent material during use of the sanitary towel.

Preferably, the dry mesh film film has a plurality of apertures, the apertures being through bores which are larger at their entrances than at their exits, in order to facilitate a swift flow of the menstruation liquid through the apertures and in order to hinder the return flow of the menstruation liquid back through the apertures. Preferably, the dry mesh film is a polyethylene film. Other materials including other plastics materials may be employed for the dry mesh film.

The sanitary towel preferably comprises an elongate body portion and a pair of wings extending one from either side of the body portion. The wings are preferably curved wings.

The wings advantageously each have on their surface which is lowermost during use of the sanitary

towel at least one adhesive pad for use in sticking the wings to the outside of a user's panties in order to facilitate retaining the sanitary towel in position during use. Thus the adhesive pads on the wings may help to avoid the sanitary towel slipping due to movement and sqeezing of the body during normal movement of the user. The wings are able to be folded and fixed to the outside of a crutch portion of the panties. Such fixing of the wings is advantageous over known adhesive pads which are not so positioned.

An embodiment of the invention will now be described solely by way of example and with reference to the accompanying drawings in which:

Figure 1 is a perspective view of a sanitary towel;

Figure 2 is a section through the sanitary towel shown in Figure 1; and

Figure 3 is an end view of the sanitary towel in use.

Referring to the drawings, there is shown a sanitary towel 2 comprising channel means 4 for receiving menstruation liquid. The channel means 4 comprises a primary channel 6 which extends along a longitudinal axis of the sanitary towel 2. The channel means 4 also

comprises four secondary channels 8 which extend as shown at right angles to both sides of the primary channel 6. The primary channel 6 and the secondary channels 8 are provided in a layer of absorbent material in the form of high-molecular absorbent cotton material 10. A dry mesh film 12 covers the cotton material 10 as best seen from Figure 2. The film 12 is provided with apertures which are through bores. The through bores are each larger at their entrance than at their exit. This facilitates a swift flow of the menstruation liquid through the apertures and it hinders the return flow of the menstruation liquid back through the apertures. This enables the film 12 to remain relatively dry and also helps the sanitary towel 2 to prevent the user contracting bacterial infections.

As can be seen from Figure 1, the sanitary towel 2 comprises an elongate body portion 14 and a pair of wings 16, 18. The wings 16, 18 extend one from either side of the body portion 14. As can be seen from Figure 1, the wings are curved wings.

As can be seen from Figures 2 and 3, the wings 16, 18 each have on their surface 20 an adhesive pad 22. The pads 22 are for sticking the wings 16, 18 to the outside 24 of a user's panties, the gusset part of which panties is shown as gussett 26 in Figure 3. This arrangement

helps to facilitate retaining the sanitary towel 2 in position during use, for example as the wearer moves about during normal daily work. Also the sanitary towel 2 can be comfortable to wear and the use of the film 20 helps to quickly take away the menstruation liquid and also feels relatively dry, adding to the comfort of the wearer. When the menstruation liquid passes through the film 12, it can be quickly dispersed via the primary channel 6 and then the secondary channels 8 into the cotton material 10. Such an arrangement of channels is able to cope with heavy liquid flows. Thus the sanitary towels 2 of the present invention form quick absorbing sanitary towels which enable the menstruation fluid to quickly penetrate the sanitary towels and not to flow backwards in substantial amounts. Furthermore, the sanitary towels are firmly fixable in position. Thus the sanitary towels of the present invention provide considerable advantages over the above mentioned known sanitary towels.

It is to be appreciated that the embodiment of the invention described above with reference to the accompanying drawings has been given by way of example only and that modifications may be effected. Thus, for example, the channel means 4 could comprise two or more primary channels 6 and/or more or less of the illustrated secondary

channels 8. Also, the secondary channels 8 could extend at a different angle to the primary channel 6 than has been shown in the drawings.

CLAIMS

1. A sanitary towel comprising channel means for receiving menstruation liquid.

2. A sanitary towel according to claim 1 in which the channel means comprises a primary channel which extends along a longitudinal axis of the sanitary towel.

3. A sanitary towel according to claim 2 and comprising at least one secondary channel which extends at an angle to the primary channel.

4. A sanitary towel according to claim 3 in which the secondary channel extends at right angles to both sides of the primary channel.

5. A sanitary towel according to claim 4 in which there are four of the secondary channels.

6. A sanitary towel according to any one of the preceding claims in which the channel means is provided in a layer of absorbent material.

7. A sanitary towel according to claim 6 in which the layer of absorbent material is covered with a dry mesh film such that the dry mesh film is positioned above the layer of the absorbent material during use of the sanitary towel.

8. A sanitary towel according to claim 7 in which the dry mesh film has a plurality of apertures, the apertures being through bores which are larger at their entrances than at their exits in order to facilitate a swift flow of the menstruation liquid through the apertures and in order to hinder the return flow of the menstruation liquid through the apertures.

9. A sanitary towel according to claim 7 or claim 8 in which the dry mesh film is a polyethylene film.

10. A sanitary towel according to any one of the preceding claims and which comprises an elongate body portion and a pair of wings extending one from either side of the body portion.

11. A sanitary towel according to claim 10 in which the wings are curved wings.

12. A sanitary towel according to claim 10 or claim 11 in which the wings each have on their surface which is lowermost during use of the sanitary towel at least one adhesive pad for use in sticking the wings to the outside of a user's panties in order to facilitate retaining the sanitary towel in position during use.

13. A sanitary towel substantially as herein described with reference to the accompanying drawings.

Patents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report)

Application number: GB 9216919.2

Relevant Technical fields

(i) UK Cl (Edition K) A5R (RGG,RPL)

(ii) Int Cl (Edition 5) A61F

Search Examiner: DR D ELSY

Databases (see over)

(i) UK Patent Office

(ii)

Date of Search: 16 NOVEMBER 1992

Documents considered relevant following a search in respect of claims 1-13

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X Y	GB 2017505 A (COLGATE-PALMOLIVE) See, for example, Figures 3 and 7	X:1-6 Y:7-13
X Y	EP 0439961 A1 (CHICOPEE) See Figures 1 and 2	X:1,2,6, 7 Y:3-5, 8-13
X Y	EP 0374910 A1 (HANFSPINNEREI) See Figure 1	X:1-6 Y:7-13
X Y	EP 0366079 A1 (McNEIL-PPC) see figures	X:1,2 Y:3-13
Y	EP 0360285 A2 (McNEIL-PPC) See Figure 1	Y:10-13
X Y	EP 0193309 A1 (NISHINO) See Figures 1 x 2	X:1,2,6 Y:3-5, 7-13
X Y	US 4795455 (LUCERI) See Figure 1 and column 2 lines 44-63	X:1,2, 6-9 Y:3-5, 10-13

Category	Identity of document and relevant passages	Relevant to claim(s)

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